Find the maximum of the secret function

Given a website to provide datasets
(https://adaphetnodes.shinyapps.io/design_of_experiments/?user_e7268) From this
website we are expected to give at least one experiment with 11 values. Each values
divided by commas and each experiment divided by newline. We are allowed to create
10000 datasets at max. We expected to find a maximum value of secret function that takes
11 values.

We try to analyze the impact of each value

```
d1 <- read.csv("20240118_0128_user_e7268-DoEShinnyApplication.csv")
res <- lm(data=d1, y ~ x1 + x2 + x3 + x4 + x5 + x6 + x7 + x8 + x9 + x10 +
x11)
summary(res)

##
## Call:
## lm(formula = y ~ x1 + x2 + x3 + x4 + x5 + x6 + x7 + x8 + x9 +
##     x10 + x11, data = d1)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.88668 -0.14543 -0.00794  0.17174  0.75667
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.022123   0.095358  10.719 1.25e-10 ***
## x1           0.219865   0.273610   0.804  0.42953
## x2          -0.096045   0.260627  -0.369  0.71572
## x3          -0.168693   0.287162  -0.587  0.56239
## x4           1.008351   0.245968   4.100  0.00041 ***
## x5           0.231421   0.289895   0.798  0.43253
## x6           0.200538   0.288496   0.695  0.49366
## x7          -0.105928   0.313739  -0.338  0.73858
## x8          -0.006927   0.276728  -0.025  0.98024
## x9          -1.424478   0.257757  -5.526 1.10e-05 ***
## x10         -0.419114   0.279474  -1.500  0.14675
## x11          0.123199   0.280093   0.440  0.66398
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.4084 on 24 degrees of freedom
## Multiple R-squared:  0.6858, Adjusted R-squared:  0.5418
## F-statistic: 4.762 on 11 and 24 DF,  p-value: 0.0006824

anova(res)
```

```
## Analysis of Variance Table
##
## Response: y
##            Df Sum Sq Mean Sq F value    Pr(>F)
## x1          1 0.4480  0.4480  2.6853  0.114323
## x2          1 0.0032  0.0032  0.0194  0.890388
## x3          1 0.2156  0.2156  1.2926  0.266788
## x4          1 2.3203  2.3203 13.9087  0.001041 **
## x5          1 0.1382  0.1382  0.8286  0.371723
## x6          1 0.0255  0.0255  0.1529  0.699237
## x7          1 0.0249  0.0249  0.1492  0.702705
## x8          1 0.1686  0.1686  1.0105  0.324817
## x9          1 5.0115  5.0115 30.0412 1.236e-05 ***
## x10         1 0.3507  0.3507  2.1022  0.160032
## x11         1 0.0323  0.0323  0.1935  0.663980
## Residuals 24 4.0037  0.1668
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

From here I can see the value of x4 and x9 is really significant. and based on the result given, its better to give the value of x1, x4, x5, x6, and x11 closer to 1 and give x2, x3, x7, x8, x9, and x10 closer to 0.